



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION:	Trent 772	BYPASS RATIO:	5.0
UNIQUE ID NUMBER:	01P14RR102	PRESSURE RATIO ( $\pi_{00}$ ):	36.3
COMBUSTOR:	Phase5		
ENGINE TYPE:	MTF	RATED THRUST ( $F_{00}$ ) (kN):	320.3

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	3.8	35.8	58.4	2.1
AS % OF ORIGINAL LIMIT	19.5	30.4	51.9	12.4
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			64.8	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			73.4	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			81.6	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			93.1	

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 x REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 - OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	3.139	0.01	0.21	35.56	1.4
CLIMB OUT	85	2.2	2.530	0.01	0.49	26.82	1.8
APPROACH	30	4.0	0.821	0.04	1.56	10.42	0.6
IDLE	7	26.0	0.270	2.46	23.97	4.66	0.2
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1085	1048	10606	17668	-
NUMBER OF ENGINES				3	3	3	3
NUMBER OF TESTS				9	9	9	9
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				3.3	33.1	55.2	1.9
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				0.8	5.6	2.4	0.7
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				2.41-3.74	26.8-37.48	53.41-57.9	1.3-2.6

### ACCESSORY LOADS

POWER EXTRACTION	0	(kW)	AT	-	POWER SETTINGS
STAGE BLEED	0	(% CORE FLOW)	AT	-	POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	95.1-101.3
TEMPERATURE (K)	279.8-293.2
ABS HUMIDITY (kg/kg)	0.00473-0.00886

### FUEL

SPEC	
H/C	1.91
AROM (%)	17.7

MANUFACTURER: Rolls-Royce plc  
 TEST ORGANIZATION: Rolls-Royce plc  
 TEST LOCATION: Derby  
 TEST DATES: 16/03/1995-02/06/2014

### NO<sub>x</sub> REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

### REMARKS

1. Data from Certification Report DNS196860
2. Certification in accordance with Part III, Chapter 2, of Amendment 7 of ICAO Annex 16 Vol. II.
3. NO<sub>x</sub> levels in accordance with Part III, Chapter 2, 2.3.2 e) (CAEP/8)
4. Same results for Trent 772 B and Trent 772C

Compliance with Fuel Venting requirements: x ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)